

# 19

## Differentiation of the Secondary School Curriculum

MEREKU, KOFI D.

The nation's educational reforms which began in 1987 had had tremendous influence on secondary education. However very little has changed in the nature of the curriculum at this level. This paper examines the nature of some of the major changes brought about by the reform, their influence on secondary education, and how insensitive the secondary curriculum has been to these changes. It concludes by suggesting several models that can be used to differentiate the secondary school curriculum for effective teaching and assessment.

### Introduction

Secondary education in Ghana and all over the world is not fixed and unchanging. Before and after independence, there have been several periods of heated debate about its nature and relevance. After independence the need for systems and policies of education which will serve as tools for the rapid development of the nations human resources provided the spur for the debates. The debates resulted in setting up of a number of committees – Kwapong Committee, Dzobo Committee – (Ministry of Information, 1968; Dzobo, *et al*, 1974). The reviews resulted in several changes in the nation's educational system and policies in the last three decades (McWilliam & Kwamena-Poh, 1978; Aboagye, 1999).

Some of the major changes in the country's educational system which are the results of the reforms are:

- change in the structure of the educational system;
- rapid increase in access to secondary education;
- compartmentalization of the curriculum; and
- diversification of the curriculum

### Change in structure

The '6-3-3' structure of pre-university education has replaced the '6-4-5-2' structure (see Appendices A and B), and thus, reducing the age at which the majority of students write their matriculation (i.e. university qualifying) examination from 23 years to 18 years. The first part of secondary education

[i.e. junior secondary school (JSS)] is now comprehensive. That is, education at JSS level is now accessible to the majority, or as many children of school-going age as possible. The introduction of JSS resulted in the shortening of the period of pre-university education from a possible of 17 to 12 years.

### **Increase in access**

The change in structure resulted in lowering the cost of schooling and making more funds available to improve quality and access so that the majority of children can get good basic education. The proportion of children of *secondary school-going-age* in secondary schools has increased dramatically because new senior secondary schools have been established and facilities in existing ones have been expanded to take more students. These changes have become necessary because more students are now qualifying for senior secondary education as a result of the abolition of the selection examination for the first part of secondary education (i.e. junior secondary school).

Today, selection to senior secondary is based on performance in a Basic Education Certificate examination (BECE) which is a *school leaving examination* and not necessarily a selection examination (Asante, 1996). Consequently, the new type of students in senior secondary today, are not only *younger*, but also the majority of them fall within ability ranges lower than that of the homogeneous ability group which hitherto attended the traditional secondary schools.

### **Diversified curriculum**

The reforms were designed to increase the relevance and efficiency of the educational system by diversifying the curriculum so as to de-emphasize *elitist* or 'academic knowledge'. To achieve this, several vocational subjects were introduced into the curriculum to give it the potential to create employment and assure employability. Today, subjects like pre-vocational and pre-technical skills have found their way into the curriculum of the first part of secondary education, and several other new ones have been introduced at the senior secondary level.

### **Compartmentalized curriculum**

Curriculum reforms which swept the continent in the 1960s and continued through the 1970s have resulted in the addition of new content areas to several school subjects (Urevbu, 1990). In mathematics, for instance, the introduction of the new topics such as sets, integers, rational numbers, vectors, transformations, probability, etc., resulted in the change of the name of the subject to *modern* or *new* mathematics. The introduction of new content areas resulted in overloading of the curricula of the various subjects, and these led to the compartmentalization (or splitting up) of the subjects. Secondary mathematics, for instance, was compartmentalized into four different groups of overlapping topics – General Mathematics, Modern mathematics, Additional mathematics and Statistics.

## Policy influencing the Curriculum

Notwithstanding the changes in the educational structure and the consequent expansion in access to secondary education, the scope as well as complexity of the content of the curricula for both senior and junior secondary schools were raised over and above what existed in GCE O' level, and Middle School Leaving Certificate level, respectively. The curriculum designers acted upon instruction to fix the scope and complexity of the content of the SSS curriculum between GCE A' level work and GCE O' level work. This raises one pertinent question – Did the curriculum designers consider the proportion of students entering secondary school before the reforms who were able to make it up to Sixth Form?

Traditional secondary schools, which admitted students through competitive common entrance examinations and offered purely academic subjects, were also referred to as Grammar Schools. Comprehensive Schools, on the other hand, admit all pupils at the end of primary education without an entrance examination. Raising the scope and complexity of the curriculum to the end of the sixth year of Grammar School education implied the curriculum designers were making provision for only the small proportion of students (i.e. about the top 3 per cent) who would have qualified for Sixth Form work had it not been the change in the structure of education.

## Nature of the Curriculum

The curricula for both senior and junior secondary schools have shown very little sensitivity to the ***needs of the new type of students*** in secondary education. The new type of students are younger and the ability of the majority of them fall below that of the homogeneous ability group which hitherto attended the traditional secondary schools. Referring to this insensitivity during the debate on '*extension of the duration of the SSS programme*', Mereku (1992) pointed out in an article published in the Daily Graphic that

While remedial classes were hardly organized for these students when they enter the SSS to compensate for their low background, they are made to learn from curriculum materials intended for the top 20 per cent who will eventually be absorbed into tertiary education. The ambition of the curriculum developers to ensure the graduates of the SSS program reach a level of achievement higher than the current O' level GCE is rather too high an expectation for the majority of students coming out of a comprehensive secondary school system. This high expectation is demonstrated in the high level of materials in the SSS textbooks and syllabuses which are virtually watered down versions of university curriculum.

One reason for making the curricula so ambitious was to ensure the reform did not sacrifice (or lower) standard of the secondary education as a result of the considerable reduction in the secondary school-going-age. Another reason why the curricula are so insensitive to the needs of the majority of students in secondary education is that the **top-down model** was used in the design. With this model, education at one level is viewed mainly as a preparation for a higher level. When secondary education was grammar-school type, curriculum developers employed this model in their curriculum design. The model is however not very helpful in comprehensive education systems. It has been

argued that the **bottom-up model** will be more useful in such systems (Cockcroft, 1982; Lawton, 1989; Mereku, 1990).

### **Effects of the ambitious curriculum**

The reform however urges that secondary education should provide a curriculum that will challenge pupils of all abilities to achieve their full potentials in knowledge, and skills required for adult life or employment (GMOE, 1995). This aspiration is reemphasized in the government's '*Vision 2020*' document. The demand to provide students with opportunities in the curriculum to achieve their full potentials so as to get selected into further education or appropriate careers is the first major long term aim of the education sector spelt out in the Vision 2020 document. But the design of the secondary curriculum and its assessment system makes it difficult to realize this demand.

All pupils in secondary education (both JSS and SSS) are made to follow similar syllabuses in the diversified and heavily loaded curriculum. As it is now very clear that *only a few* of the students are really capable of understanding the content prescribed by the syllabuses, it can be argued that the syllabuses are ambitious. It is therefore not surprising that the majority of the students experience frustration and discouragement in various subjects. Most of the students who are unable to cope with the content of the syllabuses are those who have been forced into secondary education as a result of the educational reform.

From the above arguments, it is clear that there is mismatch between what the majority of students in secondary education can learn or really do and what the expectation of the official curriculum is for these students. This observation is true because several children who hitherto would not have passed the Common Entrance Examination (CEE) to go to secondary school now find themselves studying curricula meant for the top 20 per cent of primary school children who would have passed the CEE. There is the need therefore to make the secondary curriculum relevant to the reforms by redesigning the syllabuses in such a way as to enable **ALL** pupils will have the opportunity to study the content which is appropriate to them as individuals. In other words, there is the need to introduce **differentiation** into the secondary curriculum.

### **Differentiation of the Curriculum**

Differentiation means different things to different people. Before the last decade, some educationists saw it as the process whereby pupils were ranked on academic and behavioural criteria in schools. Others viewed it as the stratification of curricula by such criteria as 'ability', sex or previous attainment. When differentiation was viewed in such perspectives its effects were generally seen as negative. Today, the word differentiation has come to mean the provision of work appropriate to individual students. Differentiation, in other words, is to ensure ALL pupils have the opportunity to study the content which is appropriate to them as individuals.

It is possible to identify a variety of usage of the term differentiation in the

Ghanaian context. During the era of the Castle schools to the period before the World Wars, it was generally assumed that children should receive education appropriate to their sex, and of course their religious inclination. Even when secondary education came fully under government control in the country, sex, and religious denomination were critical factors in the selection of certain schools.

Before the educational reforms, it was generally argued that students should have education appropriate to their expected occupational 'destinations' and for that matter their 'ability'. This period marked the form of differentiation where most students who left elementary school had to attend a *variety of selective secondary schools* – grammar, technical, commercial, etc.

In the grammar schools, subjects like the classical languages, mathematics and science which were academically demanding were offered. Most girls and less able students could not pass the Common Entrance Examinations to enter such institutions. They were forced to continue their education in vocational/commercial or technical institutions where courses which were practical and non-academic in orientation were emphasized. That is, before the educational reforms began in 1987, differentiation in the secondary curricula was done with respect to the type of selective secondary school – grammar, technical, agricultural commercial, and vocational.

Even though students now enter selective secondary education at a much earlier age, the forms of differentiation associated with the present secondary curricula are not different from those that existed before the reform. Differentiation in the curricula is seen to occur mainly between schools. Little is done to differentiate the curricula within the school to meet the needs of the new type of secondary student.

Today the ability of the majority of students in the secondary school classroom room fall below that of the homogeneous ability group which hitherto attended the traditional secondary schools. Even though the ability range of students in secondary classes has stretched considerably at the lower end, there is little differentiation in *what is taught* in all subjects.

A common way to teach these classes is to teach the whole class together, aiming the lesson at the middle ability range or just below. So the content selected for the middle ability range is taught to the whole class. Any individual or group work in the classes usually involves the same task for all. For students on the either side of the middle range to get the type of content best suited to them, the curriculum content has to be differentiated within the schools to meet the needs all.

The syllabuses of both the JSS and SSS levels can be differentiated by their content. Differentiation by content is completely different from that which weaker students are made to follow watered-down versions of what is studied by the most able students. Differentiation by content is possible in syllabuses designed using the *bottom-up* model of curriculum design. In this model, list of

topics (or items) that can be appropriately learned by ALL students at each level are first specified.

### ***Differentiating the Secondary School Curriculum by Content***

For each subject offered at the JSS level, there must be a list of topics covering the knowledge and skills that can be appropriately learned by all students at this level. The *appropriateness* of this list should be related not only to the students' ability to cope with the content but also to what will be useful in the future for the majority of students whose formal education is likely terminate at this level. Such a list may be called the **core curriculum** of the subject at a particular level. Sometimes the term core curriculum is used when referring to all the subjects at a particular level. The core curriculum, in this case, is the compulsory subjects that all the students studying at a particular level are required to take.

With regard to the former, the secondary curriculum can be likened onto a mango fruit. The central part of this fruit is the **core** which contains the seed. On the core is the **flesh** which contains the sweet yellow juice that we suck. Similarly, the curriculum can be said to comprise *a core content* and *additional content*. The core curriculum content is analogous to the basic list of topics covering the knowledge and skills that can be appropriately learned by all. At the junior secondary school (JSS) level, the basic list must contain *a list of items that indicate the minimum level of performance expected* of any student completing school at this level. This is what curriculum experts actually refer to as the **core content** (or core curriculum) in a subject.

For the purpose of assessment, the core curriculum should comprise knowledge and skills considered appropriate for students in about the lowest 40 per cent of the range of attainment. At the JSS level, these are students who normally would not have attempted any form of secondary education had it not been the reforms in education. They are students who would have found it impossible to get into secondary education since they could not have passed the competitive common entrance examination which was stopped as a result of the reform. The students in the lowest 40 per cent of the ability range in JSS should therefore not be bothered too much with what those who would eventually pass to senior secondary should be able to do.

For the highest 60 per cent of the ability range in JSS, an additional list of topics will be required to top up the *basic list* to reach the level of the current syllabus. This additional list should cater for the extra content that those who would eventually pass to senior secondary school will require.

Similarly, at the senior secondary school (SSS) level, the syllabus can be reorganize into two or three lists depending on the nature of subjects. There must be a list covering what all SSS students can appropriately learn. This can be called the **foundation list**. In the real sense of the term *core curriculum* explained above, the process of creating a new subject by using extensions of an existing subject and calling it an '*elective*' has no place in curriculum for comprehensive schools. Mathematics is still mathematics even if the level of content is raised from O' level to A' level. The practice of putting extensions (in

terms of difficulty and depth of coverage) of topics into a new list and calling it an 'elective subject' is not very helpful for the type of educational structure that operates in this country.

The content of the JSS needs to be consolidated by the majority of students who will eventually get to the SSS level. For that matter, it will be fairly reasonable to put the content of the current JSS curriculum into the *foundation list* at the SSS level. It is assumed that the lowest 40 per cent of SSS students will be able to cope with this content. These are students who are unlikely to further their studies at the tertiary level.

For the remaining 60 per cent of the ability range, two different lists may be required for the syllabus. One list for the middle 40 per cent who are likely to further their education at the tertiary level in institutions which offer non-academic programs. The other list for the top 20 per cent of students in the ability range who are likely to enter into university or other academic institutions at the tertiary level.

The syllabus content for the top 20 per cent should include items which will make the syllabus comparable to the contents of what is now contained in 'core' and 'elective' syllabuses of subjects which offer both, like mathematics, agricultural science or science. For the middle 40 per cent, the syllabus content should include items whose content will, in terms of difficulty, lie between the present JSS and the SSS syllabi contents.

#### **Differentiating the Secondary School Curriculum by Classroom Delivery System**

Today, even though secondary school classes are all mixed ability classes, there is little differentiation in the way teaching is done in all subjects. A common way to teach these classes is to teach the whole class together, aiming the lesson at the middle ability range or just below. Large differences between individuals are regrettably ignored. Any individual or group work in the classes usually involves the same task for all. So the same content is taught to the whole class, the particular material used being governed by the needs of the students in the middle class. This means the student on the either side of the middle range may not get the kind of materials or teaching best suited to them.

For effective differentiation in one's teaching at the classroom level, Kerry and Sand (1986) recommend the use of the following:

- students working at an appropriate pace and with their right materials for their level;
- good use of groups where both ends of the ability range are catered for;
- individual students being taught along carefully structured path;
- low ability students offered content or materials they will not normally see;
- most able students given extension work of different depth and quality.

### **Differentiation in Assessment in the Secondary School Curriculum**

A differentiated curriculum requires differentiation in assessment. This is "a method of assessment by which different components are deliberately set at different levels of difficulty to meet the needs of candidates with different levels of ability" (DES, 1985).

Although it did not acquire the title *differentiation* until 1980, this method of assessment has existed in various forms in different examinations schemes (Kingdon and Stobart, 1988:40). Kingdon and Stobart (*op cit*) found that examining boards used two main approaches to differentiation. These are

- differentiation *within* papers, where all candidates sit the same papers; and
- differentiation *between* papers, where candidates have the choice of sitting paper(s) that match their ability.

#### **Differentiation within papers**

The former, differentiation within papers, can be traced to some current as well as past examinations of the West African Examinations Council (WAEC). Strategies employed in this approach may be summarized as follows:

- a) Common papers taken by all candidates, but containing questions/part questions with stated different mark weighting (tariff questions) which involve choice of question on the part of the candidate. An example is the teacher's certificate 'A' examination.
- b) A common paper taken by all candidates, plus alternative papers reflecting different approaches to the subject and/or different forms of assessment but which are not intended to be at varying levels of difficulty. Candidates can attain the highest grades whichever papers they choose. An example is the GCE O'level paper in traditional mathematics examination in the late 1970s and early 1980s which had Paper I (the objective test) common to all candidates, and the Paper II in which different papers were set for candidates from the various forms of secondary education – general, technical/vocational and commercial.
- c) Common papers taken by all candidates, but containing questions designed to present different degrees of difficulty (for example, structured questions which all candidates are expected to attempt and which have a built-in 'incline of difficulty'). Examples are the GCE, SSSCE, and BECE.

The method of differentiation which involves the setting of common tasks (in common structured papers/questions) that allow all students to respond well at their own level is the method used presently for both internal and external assessment in the nation's secondary schools. In this form of differentiation, it is anticipated that the more able candidates will be able to do most of, or all, the questions as well as select and do questions which will give most marks. The low achievers are only expected to attempt those with low levels of difficulty. It is the method of differentiation that has been found to be



unacceptable because under the pressure of examination candidates are not able to make the right choices. Marks obtained from examinations with such schemes usually have a wide range. The high standard deviation of marks is a common feature and it demonstrates how well the examination can discriminate between the more able and less able candidates. Kingdon and Stobart (*op cit*:39) pointed out that grades awarded to pupils' performances through examinations which use such methods of differentiation lack coherence. They went on further to explain that

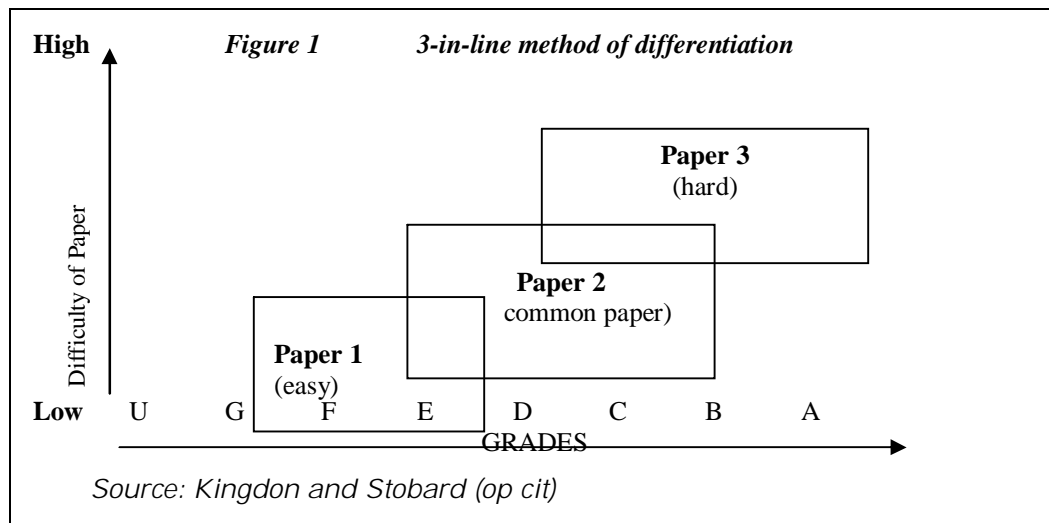
it is very difficult to explain how they had obtained the few marks that they score because many candidates score odd marks here and there. Also it is similarly difficult to describe exactly what the more able candidates can do to obtain the marks they score.

This method of differentiation does not allow the majority of pupils to demonstrate their abilities on tasks which are appropriate to their own individual capabilities. Weaker candidates find little within their grasp and more able candidates find the examination unchallenging. A system of assessment which uses this form of differentiation is therefore inappropriate for the educational reform which demands that the pupils themselves, teachers, parents, employers and other users of the assessment system are provided with accurate information on the standards which candidates have achieved.

### **Differentiation between papers**

The second method, differentiation between papers, was evolved as a compromise to cater for the needs of ALL students in comprehensive secondary education systems. Differentiation between papers can take various forms. In the UK, subject specific forms of differentiation have been evolved to meet the requirements of the content of syllabuses which have been differentiated (Horton, 1986; Matten 1988; Riding and Butterfield 1990). Forms of the differentiation, which examination boards have used in the UK, that can be adopted for assessment at the JSS and SSS levels in Ghana are as follows:

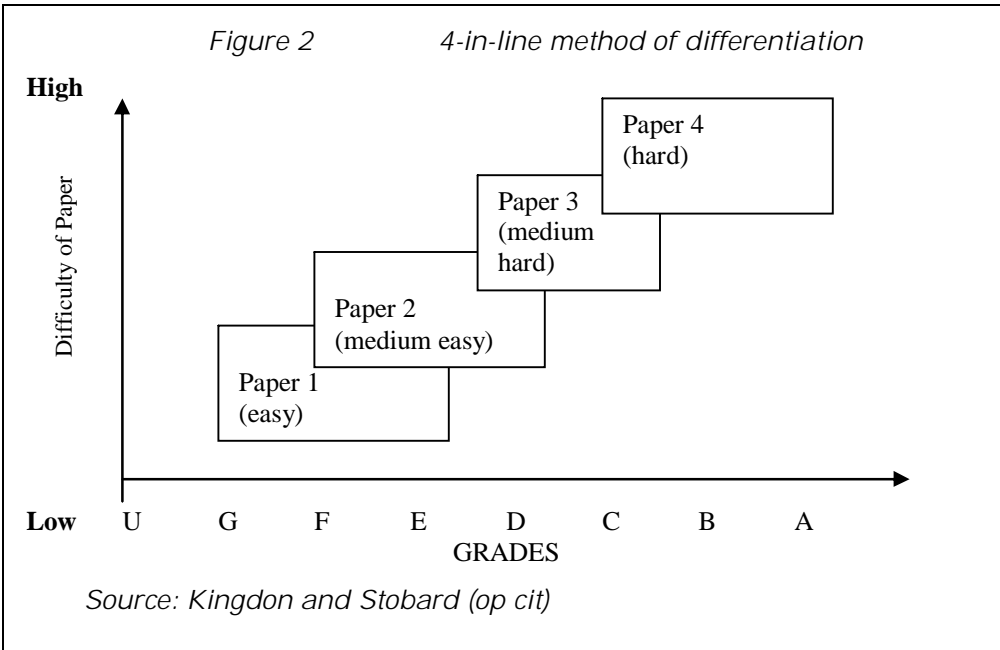
Model 1: 3-in-line method



*Common paper(s) plus alternative easier/harder papers*

Figure 1 illustrates the basic design of this model of differentiation. There is a common component, or set of components, which is pitched at the middle of the ability range for the subject. There are then easier and harder options for candidates of different abilities.

With this model it is anticipated that candidates taking the harder option will be able to obtain grades A – E and those taking the lower option grades C – G. Candidates who fail to achieve a grade E performance on the harder papers will be unclassified.



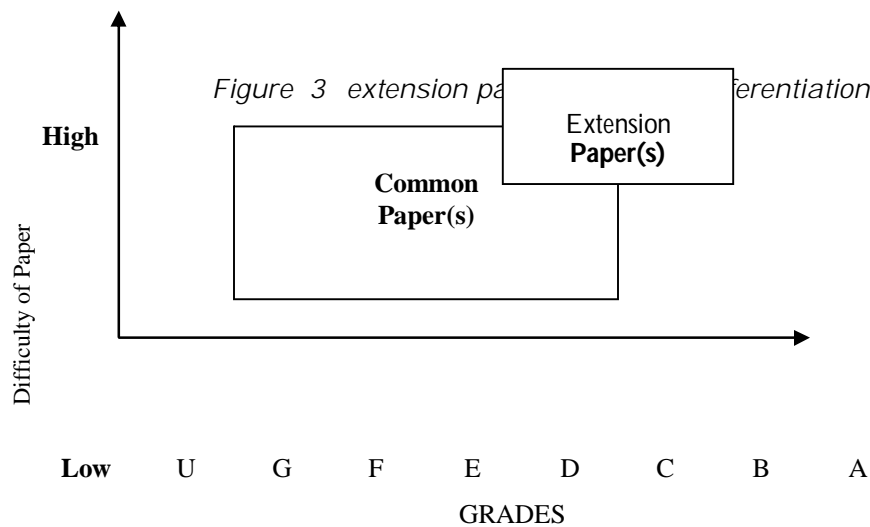
*Model 2                      4-in-line method*

*Differentiated papers with no common components*

Figure 2 illustrates the basic design of this model. This is a more extreme form of differentiation and may be useful in subject like mathematics. The basic idea is of four papers of increasing difficulty of which candidates take any two adjacent pair. Candidates taking Papers 3 and 4 will obtain grades that span the range grade A to grade D, and in exceptional circumstances grade E. Candidates who do not achieve this standard will be unclassified. Similarly papers 2 and 3 will span the range C to F, and papers 1 and 2, D to G.

*Model extension paper method*

*Common components plus extension*



*Source: Kingdon and Stobard (op cit)*

With this method common components are taken by all candidates. In addition to these, candidates have the option to take an extension paper which is harder than the common papers. The basic design of this idea is illustrated in Figure 3. With the extension paper method it is possible for candidates to be awarded up to grade C by taking only the common paper(s). Grades A and B are awarded to those candidates who take the extension paper and pass a hurdle on the common components.

#### **Problems with the Models that use differentiation between papers.**

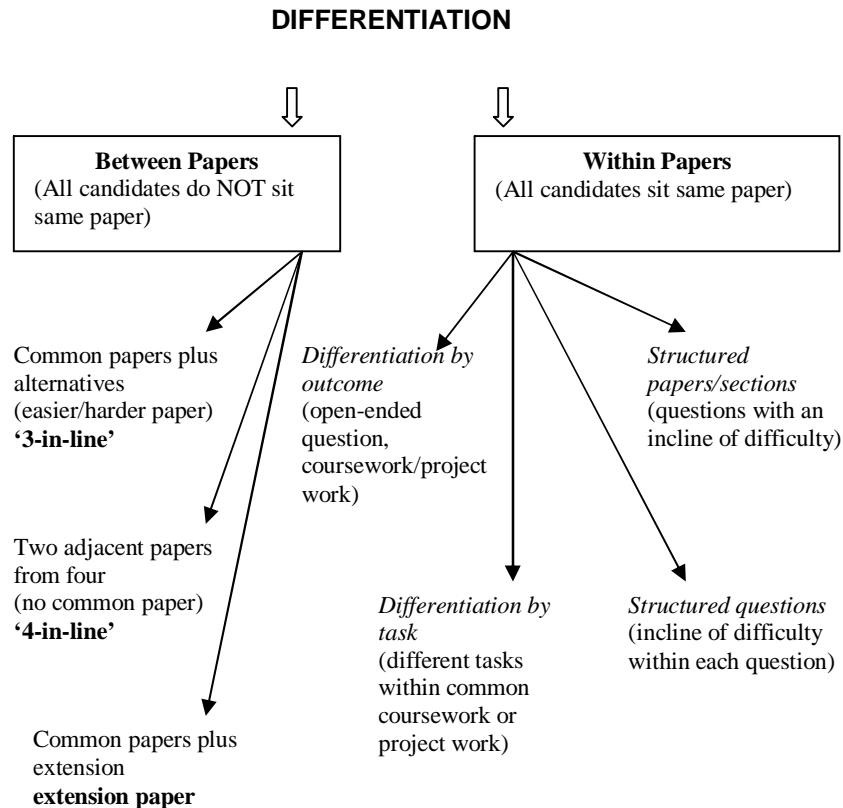
Any model of assessment that differentiate between papers may generate one or more of the following problems:

- i. there will be a problem of matching students to appropriate parts of the syllabus (i.e. differentiating the syllabus content).
- ii. there will be a problem of matching students to suitable levels in examination.
- iii. a differentiated examination will almost certainly imply differentiation in teachers' classroom delivery systems.
- iv. some parents are likely to insist upon their children being entered for the higher option even if this is inappropriate.
- v. the grades awarded for equivalent performances in the area of overlap will be the same and the certificates will not indicate the combination of papers taken.
- vi. making grades awarded in a differentiated examination comparable to those grades that exist for GCE O'level and A'level requires a great deal of work.

The first four problems can be overcome if teachers are given adequate support to know how to differentiate the curriculum by content and differentiate their teaching by using the recommendations of Kerry and Sands (*op cit*) stated above. To overcome the last two problems, there is the need to combine the two approaches to differentiation – *differentiation within papers* and *differentiation between papers*.

The two approaches are not mutually exclusive. Examination papers that differentiate primarily between papers also tend to differentiate within papers, particularly in papers aimed at the more able pupils. Within the same paper, differentiation may involve one or more of the following – use of structured papers/questions; use of outcome; or use of structured tasks. The two approaches have been summarized in Figure 4.

Figure 4 Approaches to differentiation in examinations in secondary education



### Implications for Differentiation in the JSS and SSS Curricula

This chapter has exposed some major inconsistencies within our secondary education curriculum. It has been explained that there is mismatch between what the majority of students in secondary education can learn or really do and what the expectation of the official curriculum is for these students. This observation is true because several children who hitherto would not have passed the Common Entrance Examination (CEE) to go to secondary school now find themselves studying curricula meant for the top 20 per cent of primary school children who would have passed the CEE.

The chapter also examined a new concept in education – differentiation – which seeks to address issues related to difficulties in meeting the needs of all students in comprehensive systems. It looked at how the curriculum can be differentiated effectively at the secondary level. In particular, it discussed different ways in which teachers can differentiate the content of the curriculum as well as their teaching methods to meet the needs of all students in their

classes. The chapter also covered differentiation in assessment and discussed various models of differentiation that can be employed in examinations.

A good assessment scheme for a comprehensive education system is one which will ensure **all** students do reasonably well or, at the very least, for them not to feel failures. It is one which encourages *positive achievement*. Positive achievement refers to the actual attainments of the student in a subject. The assessment scheme should enable students to *demonstrate what they know, understand and can do rather than what they do not know*. To meet the nation's needs, secondary education requires a scheme of assessment which will ensure the positive achievements of all students will be recognized.

The current assessment scheme requires students to possess a certain set of knowledge and skills before they can pass. Those who cannot demonstrate their possession of these are failed. The level required to pass is however high, and among those who fail are in fact many who possess a substantial set of attainments which go unrecorded. The scheme allows students to be compared in order to establish a hierarchy of excellence which is used in grading and making important decisions concerning their future. The use of the grades below the pass level reinforces the view of many students, parents and teachers that, in practice, only two main types of results can be obtained in an examination, that is, pass or fail.

If an assessment scheme is to provide its users (students, teachers, parents, employers, further and higher education) with accurate information on the standards which students have achieved then the scheme should provide students with the opportunities to demonstrate their actual achievement. The scheme of assessment must attach more importance to the recording of the positive achievement of students, and use this as a basis for grading students, rather than judging the individual students performance against that of other students. The scheme must ensure that the examinations given match the level of the students' attainments. This does not only involve testing at differing levels of difficulty but also including *skills not directly tested* in the current scheme of assessment. These are skills which are can be appropriately tested in coursework.

Teachers should be helped to see coursework as equally important as the other component because it also provides a way by which they can give all students opportunities to show what they know, understand and can do. By providing teachers with opportunities to assess these skills which are not easily assessed by the written papers, coursework enhances the validity of the examination as a whole. Coursework tasks will also enable all students to demonstrate positive achievement and provide an additional means of differentiation.

### **Recommendations**

To meet the demands of the educational reform program at the secondary level, there is the need to emphasis differentiation in the curriculum at both the junior and senior secondary levels. Differentiation in the curriculum implies

differentiation in assessment and examinations. To differentiate the curriculum at this level, the following recommendations will be worth pursuing.

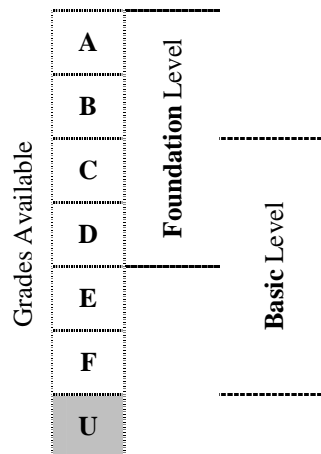
1. **Differentiation of the secondary curricula by content**

The syllabuses for both JSS and SSS be should be reviewed and differentiated in such a way that all students will have the opportunity to study the content which is appropriate to them as individuals.

2 **Differentiation of BECE**

The Basic Education Certificate Examination (BECE) should be differentiated so that students write the examination at two levels – *basic* level and *foundation* level – viz. the lower and upper levels respectively. The 3-in-line, or extension-paper, method of differentiation between papers will be very useful here. The grades that will be available at each

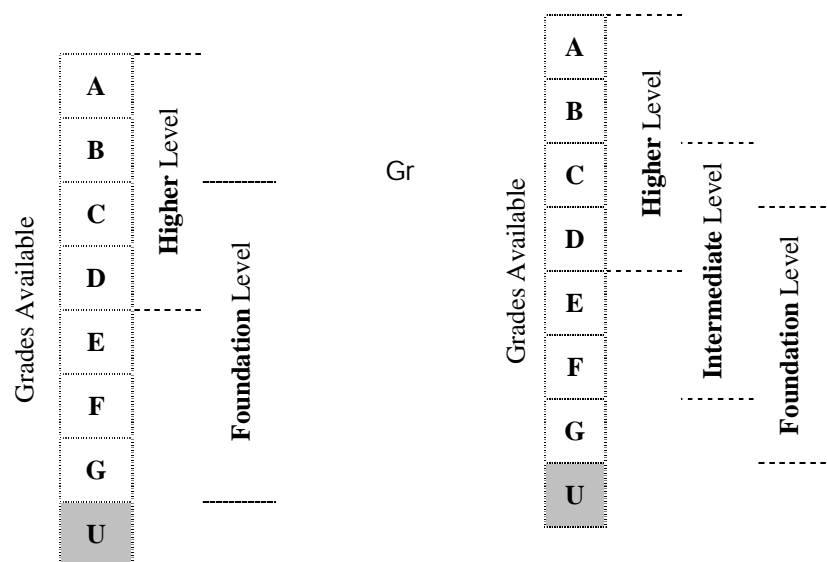
Figure 5 Grades available at the two levels in BECE



level are indicated in Figure 5.

3. **Differentiation of SSSCE**

The Senior Secondary School Certificate Examination (SSSCE) should be differentiated so that students write the examination at two or three levels depending on the nature of the subject. The levels may be named *foundation* level, *intermediate* level and *higher* level. In the case of two levels, they can be called *foundation* level and *higher* level. Any of the 'differentiation between papers' methods explained above will be very useful. The grades that will be available at each level are indicated in Figure 6.



4. **WAEC's involvement in initiatives to differentiate the curriculum**

Since the Examination Council has inadvertently assumed the role of the arbiter of the school program, it will have a greater influence on work in the schools if it is made to initiate any program which can lead to an innovation in secondary school assessment. The Ministry must therefore ensure that funds are made available to the WAEC to allow its Research Department to work in co-operation with the Curriculum Research and Development Division of the GES in the implementation of the proposed initiatives to bring about differentiation in the secondary curriculum.

5. **Cooperation of parents**

Teachers will require the full co-operation of parents if they should succeed in the implementation of the differentiation schemes. Parents must be aware of the extra support that the new scheme will require them to provide for their pupils. The scheme will require parents:

- follow closely the performance and progress of their children through the years;
- cooperate with teachers in deciding options in examinations for which their children should be entered.
- ensure their children have enough time to complete their homework (or take-home coursework tasks).

6. **Acknowledging the Teacher's Workload**

The proposed system of assessment will make heavy demands on teachers who are already finding it difficult to cope with the workload imposed on them by the reform. Giving the WAEC full control over the



administration and conduct of the coursework component of assessment will increase the already stretched workload and put more pressure on teachers. They have to cover the whole syllabus this time in order to accomplish the objectives of coursework. They will be required to adopt new teaching styles. Teachers will have to work long hours after school planning their teaching tasks, marking pupils' work and completing assessment records. This means most of the spare time which they use for small-scale farming, additional teaching or small-scale commercial ventures to supplement their meager government income will no more be available to them. It will therefore be necessary for the government to review the salaries of the conditions of service of teachers.

## References

- Addae-Mensah I, Djangmah, J S, and Agbenyega C O (1973) *Family background and educational opportunities in Ghana: a critical look at the secondary school selection mechanism – the common entrance examinations*, Cape Coast: University of Cape Coast Press. p134).
- Asante, K. B. (1996) 'The examinations that failed' in *Daily Graphic*, March 11<sup>th</sup> 1996. Accra: Graphic Corporation.
- Carter, D. (1982) 'The Assessment and Evaluation of School Mathematics', In Cornelius M, (1982) (ed), *Teaching Mathematics*, London: Croom Helm
- Cockcroft, W. H. et al (1982) *Mathematics Counts: Report of the committee of inquiry into the teaching of mathematics in schools*: London: HMSO.
- Dean, P. G. (1982) *Teaching and learning mathematics*, London, UK: the Woburn Press.
- DES - Department of Education and Science (1985) *GCSE National Criteria*, DES, London: HMSO
- Dowling, P (1991) 'A touch of class: ability, social class, and intertext in SMP 11-16' in Pimm, D. and Love, E. (eds.) *Teaching and Learning School Mathematics*, London: Hodder & stoughton
- Dzobo, N.K. et al, (1974) Report of the Education Review Committee chaired by Dr. N.K. Dzobo, *The New Structure and Content of Education for Ghana*. Ghana: Ministry of Education
- GES (1988) *The Educational Reform Programme: Guidelines on Basic Education* Ghana: Ministry of Education
- Ghana Ministry of Information (1968) *Report of the Education Review Committee, Appointed by the National Liberation Council under the chairmanship of Prof. A. A. Kwapong*, Accra: Ghana Ministry of Information.
- GMOE – Ghana Ministry of Education - (1995) *Ghana Vision 2020: A Middle Income Country by the Year 2020*. Accra: Ghana Ministry of Education

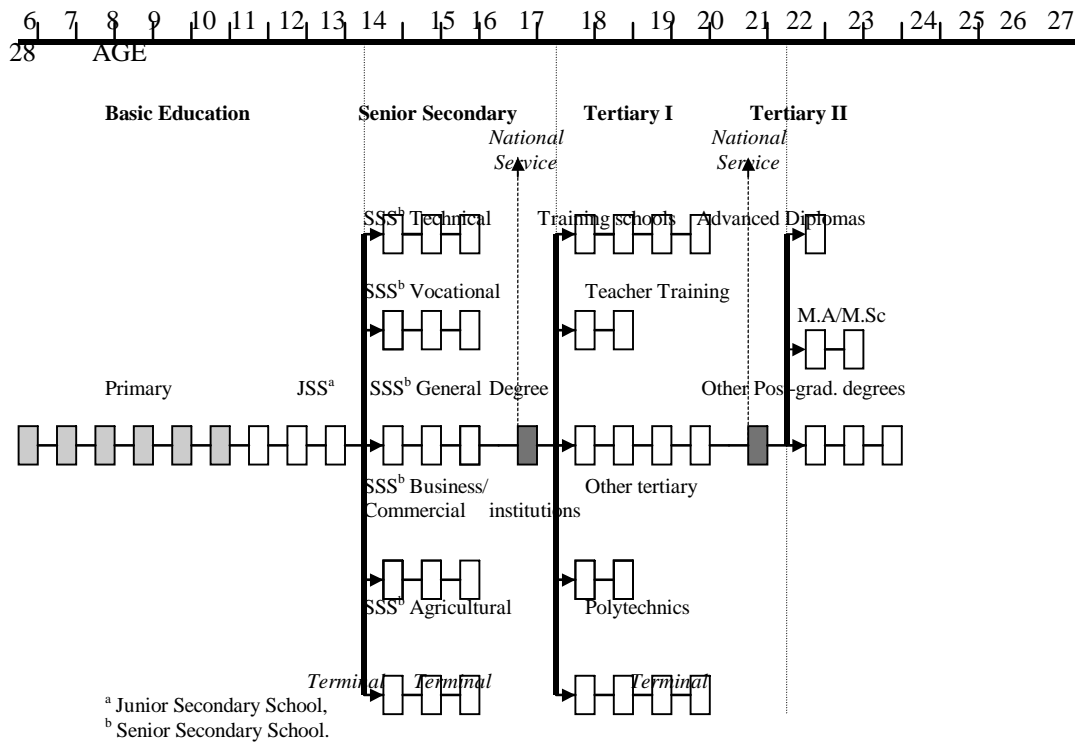
- GMOE – Ghana Ministry of Education - (1996) *Guideline for the implementation of improved school education reforms program: based on the report of the education reforms review committee and public views on the report.*, Accra: Ghana Ministry of Education
- Griffiths, H.B. and Howson, A.G. (1974) *Mathematics: Society and Curricula*, Cambridge University Press
- Hammersley, M (1985) 'From ethnography to theory: a program and paradigm in the sociology of education', *Sociology* 19(2) p.244-59.
- Horton, T. (1986), *GCSE: Examining the new system*, Cambridge: Haper & Row Publishers.
- Kerry, T. and Sands M. (1986). *Mixed ability teaching: in the early years of the secondary school*, London: Macmillan Education.
- Kingdon, M. and Stobart, G. (1988) *GCSE Examined*, London: The Falmer Press, p.40.
- Lawton, D. (1989) *Education, Culture and the National Curriculum*, London: Hodder and Stoughton
- Mathematics Association, (1979), *Prior objectives in mathematics modelled for the everyman syllabus (11-16)*. Leicester, UK: The Mathematics Association.
- Matten A. (1988) *GCSE: Parent's Guide*, Plymouth, UK: Northcote House Publishers
- McGuff I. (1990) 'Profiling and Records of Achievement' in Riding, R. and Butterfield, S. (eds) *Assessment and Examination in the Secondary School*. London: Routledge
- McWilliam, H.O.A. and Kwamena-Poh, M.A. (1978) *The Development of Education in Ghana*, Hong Kong: Longman
- Mereku K. D. (1992a) SSS Extension: Is it Warranted?, *In People's Daily Graphic*, September 19<sup>th</sup> 1992. Accra: Graphic Corporation.
- (1992b) B. E. C. : Reasons for poor student performance, *In People's Daily Graphic*, July 14<sup>th</sup> 1992. Accra: Graphic Corporation.
  - (1990). *Assessing Mathematics for the Ghana JSS Leaving Certificate Examination*, University of Leeds: School of Education, (M.Ed Dissertation.)
- Murphy R. and Torrance, H. (1988) *The changing face of educational assessment*, Milton Keynes: Open University.
- Riding, R. and Butterfield, S. (1990) *Assessment and Examination in the Secondary School*. London: Routledge
- The World Bank (1988) *Education in Sub-Saharan Africa: Policies for Adjustment, Revitalization, and Expansion* Washington, D.C: The World Bank p.3

Urevbu, A. Q. (1990) *Curriculum Innovations in Africa: Successes and Failures*, Benin, Nigeria: University of Benin Press.

Aboagye, 1999

## Appendices

### APPENDIX A The current structure of education in Ghana



## APPENDIX B The old structure of education in Ghana

